Remarks/Arguments:

On page 3, the Official Action rejects claims 1, 6-8, 15-22, 24, 29 and 31 under 35 U.S.C. § 103(a) as being unpatentable over Fullerton (US 5,677,927) in view of Rouquette (US 7,308,035) in view of Wright (US 2002/0101936) and further in view of Abeta (US 2001/0028637). It is respectfully submitted, however, that the claims are patentable over the art of record for at least the reasons set forth below.

Applicants' invention, as recited by claim 1, includes features which are neither disclosed nor suggested by the art of record, namely:

> **a filter section for filtering the plurality of subcarrier transmission signals, the subcarrier transmission signals being band limited within a bandwidth allocated for each of the subcarriers, the subcarrier transmission signals having a cumulative bandwidth narrower than a bandwidth of the subcarrier modulation signals ...**

Claim 1 relates to a filter which band limits a plurality of subcarrier modulation signals. Specifically, the subcarrier modulation signals are impulse modulated by a plurality of subcarriers. These subcarrier modulation signals are then filtered so that their cumulative bandwidth is narrower than the bandwidth of the impulse modulated signals. Support for these features can be at least found in Figs. 2 and 3, and furthermore on pages 14 and 15 of the specification. No new matter has been added.

On page 5, the Official Action suggests that paragraph 71 of Wright teaches a filter section for outputting a plurality of transmission signals in the frequency range of the impulse modulation signal. In Fig. 3, Wright shows pulse shaping filters 316, 318 and 320. Specifically, the pulse shaping filters are able to filter impulses to reduce their bandwidth. This feature is at least supported in paragraph 71 of Wright ("*The input symbol stream 502 includes a sequence of modulation symbol impulses or rectangular pulses and occupies a relatively wide frequency spectrum prior to pulse shaping by a pulse-shaping circuit.*"). Wright's system also includes modulators 322, 324 and 326 for modulating the filtered pulses onto subcarriers. Thus, Wright's pulse shaped data which is modulated by subcarriers 332, 330 and 328 do not have a cumulative bandwidth which is narrower than the bandwidth of the impulse modulated

signal. Specifically, Wright does not suggest that the modulated signals are within a band of an impulse modulated signal.

Furthermore, on page 4 of the Official Action, the Examiner believes that FullertonA teaches Applicants' filter section. Specifically, Column 24, lines 31-44, of FullertonA teaches a filter section on a receiver (not on a transmitter). Thus, FullertonA's filters are able to filter reception signals (not transmission signals).

Applicants' claim 1 is different than the art of record, because subcarrier transmission signals are filtered so that the transmitted signals have a cumulative bandwidth narrower than the bandwidth of the impulse modulated signal ("*a filter section for filtering the plurality of subcarrier transmission signals, the subcarrier transmission signals being band limited within a bandwidth allocated for each of the subcarriers, the subcarrier transmission signals having a cumulative bandwidth narrower than a bandwidth of the subcarrier modulation signals*").

Referring to the explanatory figure (not to be entered) enclosed, Applicants' system includes a modulator for impulse modulating data using subcarriers f1 and f2 and a filter section for filtering the impulse modulated subcarriers. Thus, in one example, the data is modulated by subcarriers (f1 and f2). The subcarrier modulation signals which are produced by impulse modulation, each have a broad frequency spectrum as shown in the bottom left hand corner of the explanatory figure. These two subcarrier modulation signals are then filtered by filters f1 and f2 respectively. By filtering the subcarrier modulation signals, subcarrier transmission signals (as shown in the bottom right hand corner of explanatory figure) are produced. Specifically, the filtered subcarrier transmission signals have a cumulative bandwidth which is narrower than the bandwidth of the original impulse modulated signal (the bandwidth separating f1 and f2 is narrower that the impulse modulated signal (shown by the dashed line).

Support for this feature can be at least found in Fig. 3 where the subcarrier transmission signals F1, F2, F3, F4, F5, F6 and F7 have a cumulative bandwidth which is narrower than the bandwidth of the broadband signal. This feature is also supported on page 14 of the specification ("*the signal outputted from the transmission section 105 is band limited in its subcarriers by filter section 250 so that a multiplex transmission signal is supplied to antenna section 101*").

Neither FullertonA, Rouquette, Wright, Abeta nor their combination suggest the features in Applicant's claim 1. Thus, claim 1 is patentable over the art of record.

Independent claim 32 has similar features to claim 1. Thus, independent claim 32 is also patentable over the art of record for at least the reasons set forth above.

On page 8, the Official Action rejects claims 2-5, 9, 13, 14 23, 25-28, 30 and 35 under 35 U.S.C. § 103(a) as being unpatentable over FullertonA, in view of Rouquette, in view of Wright, in view of Abeta and further in view of Aslanis (US 2002/0094049). On page 12, the Official Action rejects claims 10-12 under 35 U.S.C. § 103(a) as being unpatentable over FullertonA in view of Rougquette in view of Aslanis in view of Wright in view of Abeta, and further in view of FullertonB (US 5,687,169). On page 14, the Official Action rejects claims 32-34 under 35 U.S.C. § 103(a) as being unpatentable over Toshimitsu (US 6,735,256) in view of Rouquette in view of FullertonA in view of Wright and further in view of Abeta.

Neither Aslanis, FullertonB, Toshimitsu nor their combination make up for the deficiencies of FullertonA, Rouquette, Wright and Abeta. Thus, dependent claims 2-31 and 33-35 are patentable due to their dependency on allowable claims 1 and 32.

In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,

Lawrence E. Ashery, Reg. No. 34,515
Attorney for Applicants

LEA/dmw

Attachment: Explanatory Figure

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P.O. Box 980
Valley Forge, PA 19482
(610) 407-0700

NM484028